

NEPOROZHNIY, P.S.; FINOGENOV, Ya.I.; LAVRENENKO, K.D.; VESELOV, N.D.;  
SAVINYKH, A.I.; SAPOZHNIKOV, F.V.; SERDYUKOV, N.P.; CHUPRAKOV, N.M.;  
NEKRASOV, A.M.; BOROVAY, A.A.; KOTILEVSKIY, D.G.; STEKLOV, V.Yu.;  
KULEBAKIN, V.S.; BOGDANOV, N.P.

Petr Ivanovich Voevodin, d. 1964; obituary. Elektrichestvo no.3:  
90-91 Mr '65.  
(MIRA 18:6)

LAYROVA, M. YA., VARFOLOMEYeva, A. A.

"The nidi of leptospiroses and their classification."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

21020

8/058/61/000/005/028/050  
A001/A101*24.3500 (1137,1138,1147)*

AUTHORS: Kir's, Ya.Ya., Layssar, A.I. ...

TITLE: The high-pressure effect on emission and excitation spectra of alkali-alide phosphors activated by europium

PERIODICAL: Referativnyy zhurnal. Fizika, no 5, 1961, 182, abstract 5V391 ("Tr. In-ta fiz. i astron. AN EstSSR", 1960, no 12, 42 - 48, Engl. summary)

TEXT: The authors investigated the effect of 6,000 atm hydrostatic pressure on emission and excitation spectra of the following phosphors: NaCl-Eu, KCl-Eu, KBr-Eu and KI-Eu. Emission bands affected by pressure shift towards longer wavelengths, the shift magnitude growing along the sequence: (NaCl, KCl, KBr, KI)-Eu. In excitation spectra the shortwave decay of the group of excitation bands investigated shifts towards the longer wavelengths by ~0.2-0.4 ev. The results obtained indicate the approach of energy levels of luminescence centers when interionic distances in these phosphors decrease.

[Abstracter's note: Complete translation.]

Card 1/1

20833

9.4160 (3201, 2804 ONLY)  
24.3500 (1137, 1138, 1395)

S/048/61/025/003/021/047  
B104/B214

AUTHORS: Kirs, Ya. Ya. and Laysaar, A. I.

TITLE: Effect of uniform compression on the spectral characteristics of phosphors

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,  
v. 25, no. 3, 1961, 366-368

TEXT: This paper was read at the Ninth Conference on Luminescence (Crystal Phosphors) held in Kiyev from June 20 to June 25, 1960. The effect of uniform compression on the spectral characteristics of alkali halide crystals activated by copper and manganese was investigated. Fig. 1 shows the spectra of phosphors activated by copper at a pressure of 1 and 6,000 atm. It is seen that at a pressure of 6,000 atm the bands are shifted in the direction of short wavelengths. The shift amounts to  $0.6 \pm 0.005$  ev compared to 1 atm and increases linearly with pressure. Under similar conditions, phosphors activated by manganese show a shift of the band in the direction of larger wavelengths. Thus, on KCl-Mn, Pb under 4,700 atm pressure a shift of the emission band by 0.015 ev was

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Effect of uniform compression on the ...

S/048/61/025/003/021/047  
B104/B214

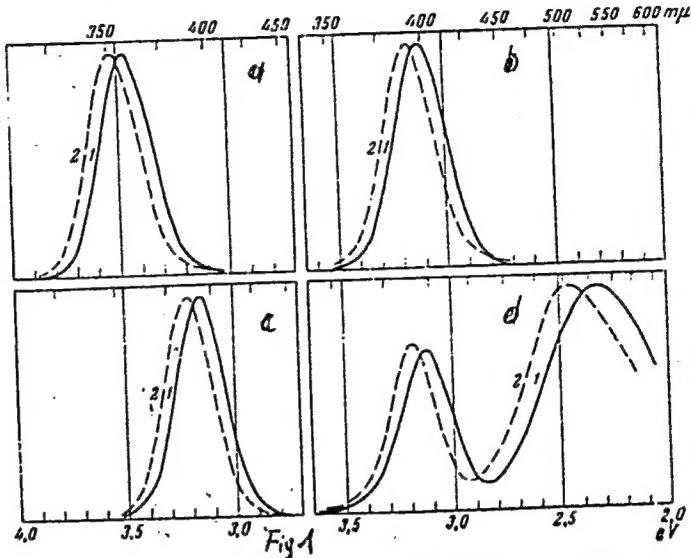
observed in the direction of larger wavelengths. The explanation of the shift in the direction of shorter wavelengths in the emission bands of phosphors activated by copper, mercury, and similar ions is that the pressure causes a redistribution of luminescence centers in the excited states. The theory of Johnson and Williams is discussed in this connection. All the phosphors investigated by the authors are set up in a series according to the behavior of their spectral characteristics. The conclusion is drawn that the distance between the ions in the luminescence centers of phosphors with the same activator differs considerably less than the corresponding lattice constants do. Thus, the structure of the centers is determined by its activator ions. It is shown further that the excitation spectrum of ZnS-Cu phosphor is shifted by 0.03 ev in the direction of shorter wavelengths at a pressure of 6,000 atm. This is connected with the increase of the forbidden band width occurring due to the decrease in the distance between the ions. There are 1 figure and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Johnson P., Williams F., Phys. Rev., 95, 69 (1954). X

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Effect of uniform compression on the...

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S/048/61/025/003/021/047  
B104/B214

Legend to Fig. 1:  
a) NaCl-Cu; b) KCl-Cu;  
c) KBr-Cu; d) KI-Cu.  
The broken curves were taken  
at 6,000 atm.



Card 3/3

S/613/62/000/018/002/013  
E039/E120

AUTHORS: Laysaar, A.I., and Kirs, Ya.Ya.

TITLE: The effect of hydrostatic pressure on the emission spectra of zinc sulphide phosphors.

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no.18, 1962, Issledovaniya po lyuminestsentsii. 23-35.

TEXT: This is a continuation of previous work on alkali halides by the same authors and is devoted to a study of pressure stimulated displacement of the emission spectra of ZnS activated by Cu, Ag, Au, Mn and Eu. For pressures up to 6000 atm the emission bands of ZnS, ZnS-Cu, ZnS-Ag and ZnS-Au are displaced to shorter wavelengths. In the case of ZnS this displacement is 0.065 ( $\pm 0.005$ ) eV, and for ZnS-Cu ( $10^{-4}$  g/g eq.) it is 0.0045 ( $\pm 0.005$ ) eV, i.e.  $11 \times 10^{-6}$  eV/atm and  $8 \times 10^{-6}$  eV/atm, respectively. Similarly the displacement for ZnS-Ag and ZnS-Au at 6000 atm is 0.035 ( $\pm 0.005$ ) and 0.03 ( $\pm 0.005$ ) eV respectively. With ZnS-Mn and ZnS-Eu the displacement at 6000 atm is 0.02 ( $\pm 0.005$ ) eV to the longwavelength side. The dependence of

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The effect of hydrostatic pressure... S/613/62/000/018/002/013  
E039/E120

intensity on pressure is also investigated, the change of intensity with pressure being given by:

$$\Delta I_p = \left| \frac{I_{p,\lambda}}{I_{p,max}} - \frac{I_{p_0,\lambda}}{I_{p_0,max}} \right|$$

where  $I_{p,\lambda}/I_{p,max}$  and  $I_{p_0,\lambda}/I_{p_0,max}$  are the intensities for a wavelength  $\lambda$  at a pressure  $p$  and at atmospheric pressure related to the intensity at the band maximum at these pressures. A possible mechanism for these shifts is discussed, based on the characteristics of the electron transitions, the distribution of impurity centres and their interaction with the surrounding medium. Ethyl ether is used as a hydraulic fluid. There are 3 figures.

SUBMITTED: December 28, 1961

Card 2/2

ACCESSION NR: AT4020795

8/2613/63/000/023/0061/0066

AUTHORS: Kirs, Ya. Ya.; Laysaar, A. I.

TITLE: Origin of the blue emission bands of ZnS-Cu phosphors and nonactivated zinc sulfide

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy\*, no. 23, 1963.  
Issledovaniya po lyuminestsentsii (Research in luminescence), 61-66TOPIC TAGS: luminescence, phosphor, Zns phosphor, ZnS-Cu phosphor, zinc sulfide  
luminescence, ZnS phosphor blue emissionABSTRACT: The authors note that the question of the origin of the emission bands of ZnS base phosphors remains quite unclear. For luminescence centers corresponding to the same emission bands, different models are proposed by different authors. Certain hypotheses are discussed. In the authors' previous work (A. I. Laysaar, Ya. Ya. Kirs, Trudy\* IFA AN ESSR, no. 18, 23, 1962), the effect of high pressure on a large number of zinc sulfide phosphors was analyzed. A particular study was made of the ZnS-Cu phosphor ( $1 \cdot 10^{-4}$  g/g), which has a green emission band, and of non-activated zinc sulfide with its blue luminescence. This paper reports on the results of an investigation of the effect of pressure on the blue band of the ZnS-Cu phosphor ( $1.5 \cdot 10^{-4}$  g/g). The experimental

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ACCESSION NR: AT4020795

technique was discussed in the work referred to above. The authors provide a new argument in favor of the view that the origin of these bands (that is, in the ZnS-Cu phosphor and in the non-activated zinc sulfide) is different. It is also established that the shift in the emission bands of ZnS-base phosphors, caused by doping them with small amounts of cadmium sulfide, is the result, in the main, of the deformation of the ZnS lattice by the cadmium ions. "The authors express their sincere gratitude to Doctor G. Ortman (H. Ortmann), at whose personal suggestion the present work was carried out." Orig. art. has: 1 figure.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy,  
AN EstSSR)

SUBMITTED: 19Jan63

DATE ACQ: 07Apr64

ENCL: 00

NO REF SOV: 002

OTHER: 006

SUB CODE: PH

2/2

Card

ACCESSION NR: AT4020796

S/2613/63/000/023/0067/0077

AUTHOR: Laysaar, A. I.

TITLE: The effect of pressure on the emission spectra of fluorite crystals activated with the rare-earth ions Sm 3+ and Eu 3+

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy\*, no. 23, 1963. Issledovaniya po lyuminestsentsii (Research in luminescence), 67-77

TOPIC TAGS: luminescence, phosphor, crystalline phosphor, fluorite, fluorite luminescence, fluorite emission spectrum, rare earth activator, Sm 3+ activator, Eu 3+ activator, fluorite luminescence pressure dependence

ABSTRACT: The author notes that the trivalent rare-earth ions, possessing the electron configuration  $1s^2 \dots 4f^k 5s^2 5p^6$ , in addition to a broadband structure, manifest a linear (or narrowband) structure in crystals for the absorption and emission spectra. In a number of previous works, the author studied the effect of high pressure on the electron-vibration transitions in different luminescence centers and established certain characteristic peculiarities of this phenomenon. In the present paper, he has undertaken to investigate the effect of hydrostatic pressure on the electron emission spectra of  $\text{CaF}_2$  crystals, activated with various rare-earth ions. A pressure of 6,000 atmospheres was applied to

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ACCESSION NR: AT4020796

some emission lines of  $\text{CaF}_2\text{-Sm}^{3+}$  and  $\text{CaF}_2\text{-Eu}^{3+}$ . It was established that in fluorite activated with samarium, both of the investigated lines (at 15,338 and 16,548  $\text{cm}^{-1}$ ) are shifted at 6000  $\text{kg/cm}^2$  toward longer wavelengths; namely, by  $6.1 \text{ cm}^{-1}$  and  $6.0 \text{ cm}^{-1}$ , respectively. In europium-activated fluorite, on the other hand, the line at 15,849  $\text{cm}^{-1}$  shifts  $3.9 \text{ cm}^{-1}$  to longer wavelengths, while the line at 16,217  $\text{cm}^{-1}$  shifts  $3.0 \text{ cm}^{-1}$  to shorter wavelengths, and the line at 17,436  $\text{cm}^{-1}$  shows practically no detectable shift at all. There is a discussion of the possible mechanisms of the spectral shifts, connected with the intensification of the crystal field under the effect of pressure. "In conclusion, the author expresses his deep gratitude to Ya. Ya. Kirs for proposing the subject of the study and for supervising the work to N. N. Kristofel' for his many, valuable remarks during the discussion of the article, and to P. P. Fefilov for supplying the crystals." Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Institut fiziki i astronomii AN Est SSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 19Jan63

DATE ACQ: 07Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 016

OTHER: 007

Card

2/2

L 60922-65 ENT(1) LIP(c)  
ACCESSION NR: ATE013553

UR/2613/64/000/026/0057/0078

AUTHOR: Layhaar, A. I.

TITLE: The effect of hydrostatic pressure on the luminescence of  
orthophosphate luminors

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 26, 1964.  
Issledovaniya po lyuminestsentsii (Research on luminescence), 57-78

TOPIC TAGS: lumino, ortophosphate, luminescence center, emission  
spectrum, hydrostatic pressure effect, emission spectrum shift,  
activator particle

ABSTRACT: The purpose of the investigation was to check further on a  
suggestion advanced in an earlier paper by the author (with Ya. Ya.  
Kire, Trudy IFA AN FSSR no. 18, 23, 1962) that the direction in which  
the emission spectra shift under the influence of pressure does not  
depend on the composition of the base, but is determined by the pro-  
perties of the activator particle. The present investigation was made  
on phosphors with base  $\beta\text{-Ca}_3(\text{PO}_4)_2$ , activated with mercury-like ions

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L 60922-65

ACCESSION N<sup>o</sup>

AT5013523

In<sup>+</sup>, Ti<sup>+</sup>, Ie<sup>2+</sup>, Sn<sup>2+</sup>, Pb<sup>2+</sup>, and Sb<sup>3+</sup> and also by the ions Mn<sup>2+</sup>, Eu<sup>2+</sup>, and Cu<sup>+</sup>. The phosphors were prepared by diffusion from the gaseous phase and activated by a technique described by N. Ye. Lushchik and I. A. Muuga (Trudy IFA AN ESSR no. 17, 67, 1961). The high-pressure chamber for the optical investigation was described by Ya. Ya. Kirs earlier (Trudy IFA AN ESSR no. 4, 108, 1956). The results have shown that the emission spectra potassium orthophosphates activated with manganese and europium experience shift under hydrostatic compression towards longer wavelengths, whereas all the remaining phosphors experience a shift in the shortwave direction. It is suggested on the basis of the new results and those of earlier investigations that the direction of the pressure-induced emission-spectrum shifts is determined primarily by the properties of the activator particle in the luminescence center, and does not come from the host lattice of the phosphor. The shifts are estimated for the half-intensity point of both edges of the emission bands. The results are tabulated. Various models for the description of the pressure-induced shifts of the spectral bands of luminescence center in a crystal are discussed.

Card 2/3

E.60922-65

ACCESSION NR: AT5013533

'I am deeply grateful to Ya. Ya. Kirs for guidance and to N. Ye. Lushchik for valuable remarks, as well as to E. Pedak and A. Ruut and especially I. Meriloo for synthesizing and supplying the research objects.' Orig. art. has: 4 figures and 1 table

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 20Jun63

ENCL: 00

SUB CODE: OP

NR REF Sov: 021

OTHERS: 025

dm  
Card 3/3

LAYSHEV, A. Kh.

LAYSHEV, A. Kh.: "On reflex reactions with the joints in cattle  
and horses following administration of pharmaceutical preparations"  
(Experimental investigation). Leningrad, 1955. Min Higher  
Education USSR. Leningrad Veterinary Inst. (Dissertations for  
the Degree of Candidate of Veterinary Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

LAYBHEV, A.Kh., kand.vet.nauk

Use of hexachloran insecticide pots of the NBK(G-17) type in  
reindeer husbandry. Veterinariia 35 no.2:88-90 F '58.  
(MIRA 11:2)

1.Taymyrskaya sel'skokhozyastvennaya opytnaya stantsiya.  
(Benzene hexachloride) (Reindeer)

LAYSHEV, A.Kh., kand.veterin.nauk

Table for restraining reindeer. Veterinariia 36 no.10:50  
(MIRA 13:1)  
O '59.

1. Taymyrskaya sel'skokhoz.opytnaya stantsiya Nauchno-  
issledovatel'skogo instituta sel'skogo khozyaystva Kraynego  
Severa.  
(Veterinary instruments and apparatus) (Reindeer)

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000928910006-6

LAYSHEV, Z.

Radio receivers from assorted components. Radio no. 6:29-30 Je '65.  
(MIRA 18:10)

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000928910006-6"

LAYSHEV, Z.

A radio amateur must have the desire to experiment. Radio no.12:  
16-17 D '62,  
(Radio operators) (MIRA 16:3)  
(Amateur radio stations)

SHCHERBKOVA, T. G., LITVIN, N. M., ZOLIVACKY, F. I.

Electrodes

Use of a  $\text{PbO}_2$ -electrode as an indicator for acid-base reactions. Zhur. prikl. khim., 25, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1958, Uncl.

L 64444-65

ACCESSION NR: AR5018977

UR/0169/65/000/007/B007/B007

551.508.25

8

B

SOURCE: Ref. zh. Geofizika, Abs. 7B65

AUTHOR: Laysk, A.

TITLE: A spectrophotometer for detailed analysis of radiation fields in crop plantings

CITED SOURCE: Sb. Issled. po fiz. atmosfery. No. 6. Tartu, 1964, 99-109

TOPIC TAGS: radiation measurement, agricultural engineering, spectrophotometer design, plant cover

TRANSLATION: The report describes a spectrophotometer designed for measuring intensities and fluxes within the plant cover. The design is based on interference filters and a rectifier photocell. The unit can be positioned at various heights within a crop stand and employs a system of cables to provide its mobility. An autocompensator with an EPP-09 unit as its basic design component serves as the recorder. Histograms of statistical distribution of measured radiation can be obtained by employing a special statistical analyzer.

Author's summary

SUB CODE: GO NP

ENCL: 00

Card

1/1

llc

LAYTA, L.G.[Laita, L.G.]; SHEPSHELEVICH, L.L.[translator];  
SHITIKOVA, M.G.[translator]; KOZINTS, G.I.[translator];  
RAUSHENBAKH, M.O., prof., red.; OMEL'YANENKO, L.M.,  
red.; BUKOVSKAYA, N.A., tekhn. red.

[Use of isotopes in hematology] Primenenie izotopov v ge-  
matologii. Moskva, Medgiz, 1963. 101 p. Translated from the  
English. (MIRA 16:7)

(HEMATOLOGY) (RADIOACTIVE TRACERS)

IAYSK, A. [Laisk, A.]

Experimental study of the statistical character of a radiation field in a cornfield. Izv. AN Est. SSR. Ser. fiz.-mat. i tekhn. nauk 14 no.1:107-119 '65. (MIRA 18:11)

1. Institut fiziki i astronomii AN Estonskoy SSR.

L 15602-63 EWP(j)/EPP(c)/BDS AFFTC/ASD Pg-4/Pr-4 PY/PR  
ACCESSION NR: AP3004712 S/0190/63/005/008/1268/1276

AUTHORS: Layta, Z.; Yelinek, M.

TITLE: Anionic copolymerization of cyclic polysiloxanes

SOURCE: Vysoekomolekuljarnye soyedineniya, v. 5, no. 8, 1963, 1268-1276

TOPIC TAGS: copolymerization, anionic copolymerization, polysiloxane, cyclic polysiloxane, octaphenylcyclotetrasiloxane, octamethylcyclotetrasiloxane, dodecamethylcyclotetrasiloxane

ABSTRACT: Studies were conducted on the kinetics of copolymerization of octaphenylcyclotetrasiloxane(OPCTS) with octamethylcyclotetrasiloxane(OMCTS), and of dodecamethylcyclohexasiloxane(DMCHS) with OPCTS in the presence of KOH and NaOH as catalysts. The dilatometric method used is described in a paper by M. Kucera and M. Jelinek (Collection Czechoslov. Chem. Commun. 25, 536, 1960). A sample of crystalline OPCTS was placed in the dilatometer (which was filled to the desired mark by either OMCTS or DMCHS), and the polymerization was conducted at 160°C. The concentration of diphenylsiloxane groups in the copolymer was estimated by spectroscopy in the ultraviolet range. It was found that with an

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L 15602-63

ACCESSION NR: AP3004712

increase in OPCTS there takes place a decrease in contraction, a decrease in the initial contraction rate, and an increase in the latent period before contraction begins. It was shown that polymerization of OPCTS takes precedence and that the polymerization of OMCTS and DMCHS begins only after OPCTS has become exhausted. The analysis of the copolymerization product obtained from the reaction of 1.5 gms OPCTS with 3.65 gms DMCHS yielded almost a 1:1 ratio. A mathematical formula is advanced where the rate of copolymerization is linked to the number of available OPCTS groups. Orig. art. has: 11 formulas, 7 charts, and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut macromolekulyarnoy khimii, Brno,  
CzSSR (Scientific Research Institute of Macromolecular Chemistry, Czech SSR)

SUBMITTED: 15Oct62

DATE ACQ: 26Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 005

Card 2/2

LAYTAI, A.

High resolving-time scintillation detector of fast neutrons.  
Prib. i tekhn. eksp. 7 no.2:53-54 Mr-Ap '62. (MIRA 15:5)

1. Ob'yedinennyj institut yadernykh issledovaniy.  
(Scintillation counters) (Neutrons)

LAYTER, D.S.

Growing corn for seed in central Kazakhstan. Agrobiologiya no. 3:108-  
112 My-Je '58. (MIRA 11:7)

1. Karagandinskaya sel'skokhozyaystvennaya soytnaya stantsiya,  
p/o Dolinka. (Kazakhstan--Corn(Maize))

LAYTES, N.S.; RAZMYSLOV, P.I.

Anniversary session of the Institute of Psychology of the  
Academy of Pedagogical Sciences of the R.S.F.S.R. Vop.psikhол.  
9 no.2:181-186 Mr-Ap '63. (MIRA 16:4)  
(Psychology--Congresses)

LAYTES, V.G., kand. tekhn. nauk

~~Glue made of soybean oil-cake and grist flour. Der. prom. 7  
no. 5:16 My '58.~~

(MIRA 11:?)

(Glue)  
(Soybean flour)

LAYTEYZEN, L.G.; BERKOVSKIY, A.G.; BREYDO, I.Ya.; GLUKHOVSKIY, B.M.;  
KOROL'KOVA, O.S.; TARASOVA, Ye.I.

New commercial-type photoelectric multipliers. Izv. AN SSSR. Ser.  
fiz. 21 no.12:1653-1659 D '57. (MIRA 11:2)  
(Photoelectric multipliers)

LAYTINEN, M.P.

More discussion of the advantages of intermittent warping.  
Tekst.prom. 21 no.6:47-48 Je '61. (MIRA 15:2)

1. Zamestitel' nachal'nika Starotkatskoy fabriki kombinata  
"Krengol'mskaya manufaktura".  
(Weaving)

LAYTSEV, Ye I.

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i  
yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernye izlucheniya v narodnom  
khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16  
aprelya 1960 g. z. Riga, v 4 tomakh. t. 4: Poiski, razvedka  
i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and  
Nuclear Radiation in the National Economy of the USSR; Tran-  
sactions on the Symposium Held in Riga, April 12 - 16, 1960, in  
4 volumes. v. 4: Prospecting, Surveying, and Mining of Min-  
eral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640  
copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tehnicheskiy komitet  
Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov  
SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy;  
ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A.  
Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

107  
Radioactive Isotopes and Nuclear (Cont.)

sov/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tehnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Svetva Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

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## Radioactive Isotopes and Nuclear (Cont.)

SOV/5592

(OY)

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentioned. There are no references.

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Card 8/11

KARAPETOV, K.A., nauchnyy sotr.; MELIKBEKOV, A.S., nauchnyy sotr.;  
CHERFAS, A.A.; Prinimali uchastiye: AMIROV, A.D.; BILANDARLY,  
A.A.; DURMISHYAN, A.G.; LAYTSEV, Yu.V.; KOCHAR-YANTS, Sh.M.;  
IBRAGIMOV, E.S.; MASUMIAN, V.Ya.; TAGIYEV, Z.B.; CHERNOMOREIKOV,  
M.Z.; KHALAFBEKOV, N.Kh.

[Instructions on the hydraulic fracturing of producing and  
injection wells] Instruktsiiia po primeneniiu gidravlicheskogo  
razryva plasta v neftianykh i magnetatel'nykh skvazhinakh.  
(MIRA 15:4)  
Baku, 1959. 58 p.

1. Azerbaidzhanskoye nauchno-tehnicheskoye obshchestvo nefte-  
gazovoy promyshlennosti. 2. Chleny Azerbaydzhanskogo nauchno-  
tekhnicheskogo obshchestva neftyanyoy promyshlennosti,  
Azerbaidzhanskiy nauchno-issledovatel'skiy institut po dobache  
nefti (for Karapetov, Melikbekov).  
(Oil wells—Hydraulic fracturing)

LAYUKHIN, M. A.

NABOKOV, V.A.; POPOV, S.D.; LAYUKHIN, M.A.; KHALAMOVA, T.A.

The helicopter and prospects for use in the control of arthropod  
vectors of human disease [with summary in English]. Med.paraz.  
i paraz.bol. 26 no.1:5-11 Ja-F '57. (MLRA 10:6)

1. Iz sektora profilaktiki infektsiy Instituta malyarii,  
meditsinskoy parazitologii i gel'mitologii Ministerstva zdravoo-  
okhraneniya SSSR (dir. instituta - prof. P.G.Sergiyev, zav. sektorom  
prof. V.A.Nabokov)  
(ARTHROPODS, prev. and control  
insecticide spraying with helicopter)  
(INSECTICIDES  
spraying with helicopter)

LAYUS, A.M.; KHAR'KOVSKIY, P.P.

Chill mold machine. Lit.proizv. no.2:9-10 F '56. (MLRA 9:6)  
(Molding machines)

89588

S/190/61/003/002/006/012  
B101/B215

15-8500

AUTHORS:

Layus, L. A., Kuvshinskiy, Ye. V.

TITLE:

Effect of the molecular weight on the strength of  
oriented amorphous polymersPERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 2, 1961,  
215 - 222

TEXT: It was the purpose of the present work to study the effect of the molecular weight of oriented polymers on their strength in that range of molecular weights in which the strength of isotropic polymers is no longer affected. Stress-strain curves of oriented polymers also had to be plotted. Polyvinyl acetate (PVA), polymethyl methacrylate (PMMA), and polystyrene (PS) were used for the experiments. From the solutions of these polymers films were deposited on glass plates and then dried in the vacuum for 3 - 4 days; the temperature was gradually increased up to 90°C for PVA and 150°C for PS and PMMA. The softening temperature was determined by plotting the determined. The softening temperature was determined by plotting the

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Card 1/7

...ion  $\epsilon_b$  ( $\sigma_p$  in the Fig.),  
...ers as a function of the tensile strength

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B101/B215

Effect of the molecular weight ...

Hence, a dependence of tensile strength on the molecular weight which does not exist in isotropic polymers was found in polymers oriented by drawing, E. I. Barg (Dokl. AN SSSR, 84, 257, 1952, Ref. 5), A. V. Stepanov (Zh. eks. i teor. fiziki, 19, 973, 1949, Ref. 14), and P. P. Kobeko (Amorfnyye veshchestva, Izd. AN SSSR, 1952 str. 234 (Amorphous Substances, Publishing House of the AS USSR, 1952, p. 234) Ref. 15) are mentioned. There are 6 figures, 1 table, and 15 references: 10 Soviet.-bloc and 5 non-Soviet.-bloc. The 4 references to English language publications read as follows: W. H. Carothers, F. J. Natta, J. Amer. Chem. Soc., 55, 4714, 1933; A. M. Sookne, M. Harris, Industr. and Engng. Chem. 37, 478, 1945; Sh. Tachikawa, Rayon a. Synthetic Textiles, 32, no. 3, 31, 43, 1951; 32, no. 7, 32, 42, 1951; P. Y. Flory, J. Polymer Sci., 11, 37, 1953

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR  
(Institute of High Molecular Compounds of AS USSR)

SUBMITTED: June 16, 1960

Card 3/7

LAYUS, L.A.

33383  
S/190/62/004/002/014/021  
B110/B101

15.9300

AUTHORS: Bresler, S. Ye., Pyrkov, L. M., Frenkel', S. Ya.,  
Layus, L. A., Klenin, S. I.

TITLE: Molecular conformation, and hydrodynamic and mechanical  
properties of 4:5 styrene - isoprene bulk copolymer

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 2, 1962, 250-255

TEXT: The authors studied the hydrodynamic and mechanical properties of hybrid polymers on the basis of the selective solubility of one type of blocks in the corresponding solvent to make a quantitative estimate of the conformation changes of macromolecules dependent on the solvent, and to measure the mechanical properties of the resulting films. They investigated 4:5 styrene - isoprene bulk copolymer (BCSI) made with butyl lithium and consisting of four polystyrene (PS) and five polyisoprene (PI) blocks. The molecular weight determined in methyl ethyl ketone was  $M = 77,000$ , that of PS:  $M \approx 10,000$ , that of PI:  $M \approx 7500$ . Solvents used were: benzene, toluene, heptane, octane, and methyl ethyl ketone. 0.1 mm thick films were obtained from 1 g/100 ml of solutions in heptane.

Card 1/4

Molecular conformation, and...

33383  
S/190/62/004/002/014/021  
B110/B101

and methyl ethyl ketone on Hg surface at 25°C and 20 mm Hg. The diffusion coefficients were determined at 0.05% concentration by a Tsvetkov diffusometer. The sedimentation coefficients were determined by a Svedberg ultracentrifuge. The molecular weight was calculated according to Svedberg;  $M = (S_a RT) / [D(1 - \bar{V}_Q)]$  (2), and Flory and Mandel'kern,  $2.5 \cdot 10^6 = [\eta_o N / (1 - \bar{V}_Q)] [S([\eta] / M^2)^{1/3}]$  (3), where  $N$  = Avogadro's number;  $\rho$  = density, and  $\eta_o$  = viscosity of the solvent. (3) presupposes conformation of statistical nodes of macromolecules, the linear dimensions being proportional to  $M^{1/2+\epsilon}$  ( $\epsilon$  = small parameter). The coincidence of different mean weights in different solvents indicates weak polydispersity. The absence of a relation between  $M_w$  and  $M_{SD}$  and the mean hydrodynamic weights  $M_{S\eta}$  and  $M_{D\eta}$  demonstrates the unsuitability of the model of statistical nodes. The PI blocks keep the octane-insoluble PS blocks in solution. Therefore, they form small pearls threaded on the polvisoprene string. In methyl ethyl ketone, it is vice versa. Flory's theory does not apply to this case. There is no relationship between "viscous" and

Card 2/4

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S/190/62/004/002/014/021  
B110/B101

Molecular conformation, and...

"diffusion" inertia radii for selective solvents. It follows that, in these solvents, the molecules are converted from statistical nodes into half-stiff particles, to which Fig. 26, t does not apply but Fig. 21 according to Schlick and Levy (see below). Films obtained from octane, heptane, and hexane solutions of BCSI with evaporation of the solvent are rubberlike, nontransparent, and highly elastic. Films from methyl ethyl ketone remind of plasticized PS. Films (A) obtained from heptane would resume their old shape when the loading ends, the more solid films (B) from methyl ethyl ketone to a smaller extent. (A) has:  $E \approx 10 \text{ kg/cm}^2$  like rubber. (B) has  $E \approx 200 \text{ kg/cm}^2$ . Films from benzene are mechanically similar to (B). Blocks with globules "remember" their conformation on transition into the film (A) may be regarded as polyisoprene with chemically bound, glassy filler, (B) as PS with chemically bound plasticizer. "Tempering" occurs during film formation; during "annealing", the globules develop, and the properties of the film correspond to those of film obtained from benzene. There are 3 figures, 2 tables, and 9 references: 7 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: F. M. Merrett, J. Polymer. Sci., 24, 467, 1957. S. Schlick, M. Levy, J. Phys. Chem., 64, 883, 1960.

Card 3/4

Molecular conformation, and...

33383  
S/190/62/004/002/014/021  
B110/B101

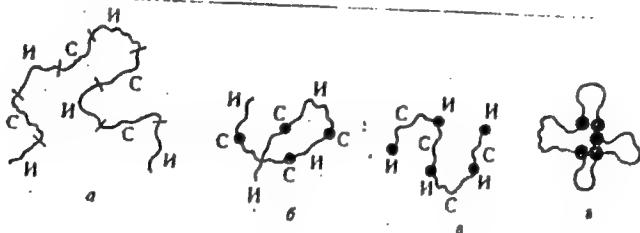
ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR  
(Institute of High Molecular Compounds AS USSR)

SUBMITTED: February 10, 1961

Fig. 2. Diagram of the conformation of BCSI molecules in various solvents.

Legend: (a) Benzene (good solvent for both types of blocks); (b) octane; (c) methyl ethyl ketone; (d) structure to be suggested in selective solvents ("unsoluble" blocks aggregated); G = styrene blocks; H = isoprene blocks.

Fig. 2



Card 4/4

LAYUS, L.A.

Testing samples oriented by stretching the stress-temperature curves supplied better information on orientation than birefringence.

Report presented at the 13th Conference on high-molecular compounds  
Moscow, 8-11 Oct 62

LAYUS, Lyudvig Avgustovich; ZUYEV, Boris Mikhaylovich; STEPANOV,  
Semen Grigor'yevich; LYUSTIBERG, V.F., inzh., ved. red.;  
FOMICHEV, P.M., tekhn. red.

[Impact-tension tester of hard polymers. Polarization unit  
for optical investigation of stresses] Koper dlia ispytaniia  
tverdykh polimerov na udarnoe rastiazhenie. Poliarizatsionnaia  
ustanovka dlia issledovaniia napriazhenii opticheskim metodom.  
Moskva, Filial Vses.in-ta nauchn. i tekhn.informatsii, 1958.  
15 p. (Perevodoi nauchno-tehnicheskii i proizvodstvennyi opty.  
Tema 32. No.P-58-13/5) (MIRA 16:3)  
(Polymers--Testing) (Optical instruments)  
(Polarization (Light))

LAYUS, L.A.; KUVSHINSKIY, Ye.V.

Structure and mechanical properties of "oriented" amorphous linear polymers. Fiz. tver. tela 5 no.11:3113-3119 N '63. (MIRA 16:12)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad.

ACCESSION NR: AP4009147

S/0190/64/006/001/0052/0057

AUTHORS: Layus, L. A.; Kuvshinskiy, Ye. V.

TITLE: Isometric heating as a method of studying oriented amorphous solid polymers

SOURCE: Vyssokomolekulyarnye soyedineniya, v. 6, no. 1, 1964, 52-57

TOPIC TAGS: polymer, solid polymer, amorphous polymer, orientation, oriented polymer, stretch, isometric heating, deformation, stress, stretch velocity, macro-molecule orientation, degree of orientation, isometric heating diagram

ABSTRACT: The proposed method of isometric heating is similar to the thermo-mechanical method. In the first the stress is measured under constant deformation and gradual increase in temperature, while in the second method the deformation under constant stress is being recorded. The material for the present investigation consisted of polyvinylacetate (PVA) (Mol. wt. 790 000) and polymethylmethacrylate (PMMA) (Mol. wt. 710 000) film bands 100 microns thick, 2 mm wide, and 20 mm long. These bands were held immobile in a vertical position by two clamps, the upper being connected with a dynamometer. The setup was placed in a chamber equipped with a heating system to provide a gradual temperature rise at a desired

Card 1/2

ACCESSION NR: APL009147

rate within a range of 1 to 60C per minute. The stress and the temperature were recorded simultaneously by means of the three-point automatic recorder EPP-09. The softening points of the PVA and PVA films were 44 and 120C respectively. The film bands were stretched at an elevated temperature, immobilized by clamps, and rapidly cooled by a current of cold air. It was found that the diagrams of isometric heating of fixed samples depended upon the degree of stretch, the temperature, and the velocity of stretch. These diagrams permit study of the mean degree of orientation of the macromolecular structures and the state of the intermolecular links. Samples having identical degrees of orientation of macromolecules reveal striking differences when subjected to such study under conditions of isometric heating. Orig. art. has: 3 diagrams.

ASSOCIATION: Institut vysokomolekulovarnykh soedineniy AN SSSR (Institute of High-Molecular-Weight Compounds AN SSSR)

SUBMITTED: 21Jul62

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: CH

NO R&F Sov: 001

OTHER: CCL

Card 2/2

L 00992-66 EPA(s)-2/ENT(m)/EPF(c)/ELP(j)/T WW/RM

ACCESSION NR: AP5019567

UR/0191/65/000/008/0034/0038  
678.742'547.785.5-416.01:539.3

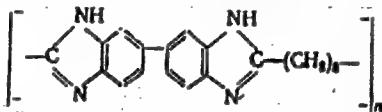
AUTHOR: Layus, L. A.; Bessonov, M. I.; Adrova, N. A.; Koton, M. M.

TITLE: Physicomechanical properties of poly-2-octamethylene-5-5'-dibenzimidazole films

SOURCE: Plasticheskiye massy, no. 8, 1965, 34-38

TOPIC TAGS: heat resistant polymer, polybenzimidazole

ABSTRACT: The mechanical properties and heat resistance of isotropic and oriented films of poly-2-octamethylene-5,5'-dibenzimidazole



films of various molecular weights have been studied in a wide range of temperatures. The films were deposited from formic acid solutions. Testing involved thermomechanical and thermogravimetric measurements and measurements of tensile strength, elongation, and modulus of elasticity.

Card 1/2

L 00992-66

ACCESSION NR: AP5019567

3

gation, and modulus of elasticity at various temperatures. The data are given in graphic form. On the basis of the data, optimum conditions for film drying and orientation stretching were selected. The results showed that the polymer is suitable for producing high-grade polymer films. In addition to good strength, elasticity, and thermal stability, the films also showed good dielectric properties. Film mechanical strength could be considerably increased by orientation stretching in the softened state: tensile strength attained 5000 kg/cm<sup>2</sup> while film elasticity and flexibility met the most stringent specifications [Sic]. The polymer was considered to be of considerable interest as a material for films suitable for construction, electrical and thermal insulation purposes and for fibers suitable for long-time service at temperatures up to 200C. Orig. art. has: 9 figures and 1 formula. [SM]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: OC60

NO REF SOV: 006

OTHER: 002

ATD PRESS: 4068

Card 2/2

L 23328-66

EWT(m)/EWP(j)/T RM

ACC NR: AP6006982

SOURCE CODE: UR/0190/66/008/002/0278/0281

AUTHORS: Ginzburg, B. M.; Korshavin, L. N.; Frenkel', S. Ya.; Layus, L. A.; Adrova, N. A.

39

B

ORG: Institute of High-Molecular Polymers, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)TITLE: Crystallinity of poly-2,2'-octamethylene-5,5'-dibenzimidazole<sup>1</sup>

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 278-281

TOPIC TAGS: x ray diffraction study, crystalline polymer/ URS-50I x-ray diffraction apparatus, GUR-3 goniometer

ABSTRACT: X-ray diffraction study of freshly prepared fibers and films of poly-2,2'-octamethylene-5,5'-dibenzimidazole (I) disclosed a crystalline structure of high order for that polymer, in spite of earlier observations to the contrary by the authors as well as by other workers (A. A. Izyneyev, V. V. Kurashev, V. V. Korshak, T. M. Frunze, and N. Sh. Aldarova. Izv. AN SSSR, Otd. khim. n., 1963, 2019; L. A. Layus, M. I. Bessonov, N. A. Adrova, and M. M. Koton. Plast. massy, 1965, No. 8, 34). The x-ray diffraction study was performed using instrument URS-50I with goniometer GUR-3 adjusted for measurements at small angles. It was established that a 3-hr thermal treatment at 160°C results in almost total amorphization of the structure, as can be seen in Fig. 1. However, it also leads to a two-fold rise of tenacity and a

Card 1/2

UDC: 678.01:53+678.6

L 23328-66

ACC NR: AP6006982

*I*, pulses/sec

Fig. 1. Low angle x-ray diffraction on fibers (meridional direction):  
1 - freshly formed;  
2 - treated at 160°C for  
3 hours. 3

five-fold rise in the elasticity modulus. Relaxation mechanisms and structural processes related to the mobility of the heterocyclic sections of the chain of I, as well as the direct influence of formic acid, are discussed as probable causes of the crystallinity in freshly formed I. The authors express their gratitude to Ye. M. Pokrovskiy and K. K. Kalnyn'sh for taking the IR spectra and to A. I. Slutsker for evaluation of the results. Orig. art. has: 8 figures and 1 formula.

SUB CODE: 07/ ■ SUBM DATE: 15Mar65/ ORIG REF: 007

OTH REF: 003

Card 2/2 *W*

(A) L 11235-66 EWT(m)/EWP(j)/T/EWA(c)/ETC(m) MM/RM  
 ?CC NR: AP6002214

SOURCE CODE: UR/0080/65/038/012/2728/2734

AUTHOR: Koton, M. M.; Yakovlev, B. I.; Rudakov, A. P.; Knyazeva, T. S.; Florinskiy, F. S.; Bessonov, M. I.; Kuleva, M. M.; Tolparova, G. A.; Layus, L. A.

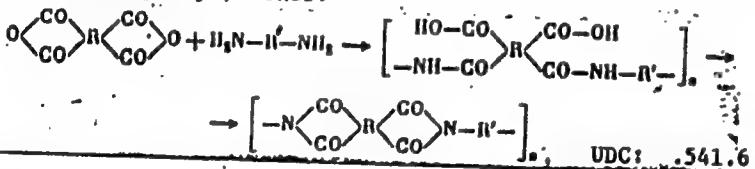
ORG: Institute of Macromolecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Preparation and physicomechanical properties of polypyromellitimide

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2728-2734

TOPIC TAGS: heat resistant plastic, fire resistant material, dielectric material, polyimide, polypyromellitimide

ABSTRACT: A study has been made of the preparation and physical and mechanical properties of a polyimide, viz., polypyromellitimide. Test results showed that the polymer may find widespread use as a heat resistant and low temperature resistant material, and is of special interest as a high temperature film dielectric. A poly-pyromellitimide film similar to the U.S. H-film was prepared from pyromellitic anhydride and bis(4-aminophenyl) ether:



L 11235-66

ACC NR: AP6002214

Polycondensation to the polyamido acid intermediate was carried out at 15C. Poly-Pyromellitimide films were prepared by drying solutions of the polyamido acid on glass substrates at 20-40C followed by heat treatment at 80-400C to produce imidization. Optimum preparative conditions were determined. The films were transparent, gold-brown in color, thermally stable, nonburning at up to 600-700C, unaffected by organic solvents, highly resistant to  $\gamma$ - and UV radiation, low temperature resistant, nonshrinking, resistant to humidity, and readily metalized. In its mechanical properties at high temperatures, the material surpasses all existing polymers. These properties can be further improved by orientation stretching, after which they approach those of glass-reinforced plastics and metals. Orig. art. has 5 figures and 3 tables.

[SM]

SUB CODE: 11/ SUBM DATE: 08Mar65/ ORIG REF: 008/ OTH REF: 011/

ATD PRESS: 4173

PC  
Card 2/2

LAYVIN'. M.

29283 Vliyaniye paraaminobenzoynoy kisloty na post i produktsiyu toksina stolbynyachnoy palochki. Izvestiya Akad. nauk latv. SSR, 1949, No 8, s. 93-96. - Na latysh, yaz. - Rezyume na rus. yaz. - Bibliogr: 7 nazv.

SO: Letopsi' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

LAYVINYA, I. Ya. In Latvian

LAYVINYA, I. Ya. -- "Investigation of Latvian Brown Cattle on Sovkhozes of the Latvian SSR." Latvian Agricultural Academy, 1954. In Latvian (Dissertation for the Degree of Candidate of Agricultural Sciences)

SO: Izvestiya Ak. Nauk Latviyskoy SSSR, No. 9, Sept., 1955

LAIVINYA, Jana.

LAIVINA, ILGA JANA

"M. Latvijas brunie lopi padomju saimniecibas. Riga, Latvijas valsts izdevnieciba, 1956. 126 p. (Latvian brown cattle on state farms)."

DA

Not in DLC

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

LAIVINKA, M.

PW

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D

Chem Abs

v.48 25 Jan 54 - Influence of p-aminobenzoic acid on the growth of Bacillus tetani and formation of toxin. M. Laivinka. *Laivinas PSR Zinatnu Akad. Vestis* 1949, No. 8 (Whole No. 25), 93-5. —Addit. of p-aminobenzoic acid to the growth medium, in 0.05 mg. % concn., increased the titer of the toxin by 30% without influencing the growth rate of the bacillus and the pH. At higher concn., no further improvement was observed. A. Dravnicka

Microbiology

7-15-64  
APM

ACC NR: AT7001781

SOURCE CODE: UR/3119/66/000/004/0031/0038

AUTHOR: Shvarts, K. K.; Layzan, B. B.; Vitol, A. Ya.

ORG: Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR)

TITLE: Macrostructure of Mn<sup>++</sup> in NaCl crystals and their change under the influence of irradiation

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 4, 1966. Ionnyye kristally (Ionic crystals), 31-38

TOPIC TAGS: sodium chloride, electron paramagnetic resonance, paramagnetic ion, manganese, irradiation effect, luminescence center

ABSTRACT: The authors summarize the results of their earlier investigations of electron paramagnetic resonance and luminescence of Mn<sup>++</sup> in NaCl crystals (Izv. AN SSSR ser. fiz. v. 29, 404, 1965 and preceding papers). While the authors' results concerning the microstructure of the Mn<sup>++</sup> centers in NaCl crystals containing impurities agreed in the main with those of others, they did observe a strong influence of certain cation impurities on the arrangement of the Mn<sup>++</sup> ions in the lattice. The presence of Cd<sup>++</sup> and Ca<sup>++</sup> as impurities violates the principle of local compensation of the charge in such crystals, but the presence of Pb<sup>++</sup> does not. The strongest effect on the microstructure of the Mn<sup>++</sup> centers is exerted by anion impurities, especially F<sup>-</sup>. The nature of the manganese luminescence centers in NaCl was investigated by means of optical and EPR methods and it is concluded that in view of the observed

Card 1/2

ACC NR: AT7001781

differences between the spectral parameters of the luminescence centers in regular lattice points and those in clusters, that the results favor the model of the luminescence center proposed by F. Seitz (Trans. Faraday Soc. v. 35, 74, 1939). The net result of the research is that in quenched NaCl-Mn crystals the luminescence centers are Mn<sup>++</sup> ions which replace cations of the main substance in regular lattice points. Admixtures of Cd<sup>++</sup> and Ca<sup>++</sup> ions exert a stronger influence on the distribution of the cation vacancies and increase the number of Mn<sup>++</sup> ions in a cubic environment. In crystals NaCl-MnF, the Mn<sup>++</sup> ions are predominatly localized near the F<sup>-</sup> ions. In NaCl-MnCd crystals, the kinetics of the decay of the paramagnetic centers changes strongly under  $\gamma$  irradiation, owing to the effective capture of carriers by the Mn centers. Orig. art. has: 3 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 015/ OTH REF: 012

Card 2/2

ACCESSION NR: AP4013750

S/0197/63/000/012/0057/0060

AUTHORS: Layzan, F; Vitol, A.

TITLE: Characteristics of EPR spectra of Mn<sup>2+</sup> in NaCl crystals with Ca<sup>2+</sup> and Cd<sup>2+</sup> admixture

SOURCE: AN LatSSR. Izv., no. 12, 1963, 57-60

TOPIC TAGS: crystal, pulverized crystal, single crystal spectra, spectral intensity

ABSTRACT: Several NaCl-Mn crystals containing Ca and Cd mixtures, prepared by the Kiroopoulos technique, have been investigated. The Mn<sup>2+</sup> spectra are found to depend on the method of thermal treatment used with the two admixtures simplifying considerably the otherwise complicated Mn<sup>2+</sup> spectra. Furthermore, the spectra of pulverized NaCl-Mn crystals are examined and found to differ only slightly from the single crystal spectra. In proportion to pulverization, the spectral intensity diminishes and the Mn<sup>2+</sup> centers disintegrate. "The authors express their gratitude to K. K. Shvarts and Yu. K. Krumin' for their assistance." Orig. art. has: 2 figures.

Card 1/2

ACCESSION NR: AP4013750

ASSOCIATION: Institut fiziki AN Latv. SSR (Institute of Physics AN Latv. SSR)

SUBMITTED: 01Mar63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH

NO REF SOV: 000

OTHER: 007

Card 2/2

LAYZAN, L.K.

Methodology for continuous recording of oxygen tension in the cerebrospinal fluid. Lab. delo. no.1:36-38 '65.

(MIRA 18:1)

1. Kafedra normal'noy fiziologii (zaveduyushchiy - prof. G.A. Vaksleyger) Orenburgskogo meditsinskogo instituta.

L-Ay>AN, O.R.

## 25(1) PHASE I BOOK EXPLOITATION

SOV/2132

Kiev. Ukrainskiy Nauchno-Issledovatel'skiy Institut Metallov  
Tekhnologicheskaya proizvodstva i sverkayava chernyykh metallov; sbornik  
(The Manufacture and Characteristics of Ferrous Metals); a collection  
of articles. Khar'kov, Kharkovskiy gos. univ., im. A.N. Gor'kogo,  
1958. 271 pp. (Series: Issled. Trudy, vyp. 4.) Errata slip in-  
serted. 1,000 copies printed.

Editorial Staff of this book: P.A. Aleksandrov, D.S. Kazarnovskiy,  
M.I. Kurmanov, M.P. Leve, V.P. Onopriyenko, V.A. Tikhonov, and  
Ye. A. Smejgov. Ed.: S.S. Liberman. Tech. Ed.: K.O. Durin

PURPOSE: The book is intended for the scientific personnel of  
institutes and for engineers and technicians of metallurgical  
enterprises and other branches of the industry.

COVERAGE: The collection of articles reviews the work carried on at  
the Institute of Metals on the technology of blast furnaces, open-  
hearth furnaces, and rolled stock production. It also deals  
with problems in metallurgy, heat treatment of ferrous metals  
and methods for their study. Particular attention is devoted to  
the preparation of charges and blast furnace practice with increased  
gas pressure, open-hearth production with oxygen blast and rolling  
of light profiles. No personalities are mentioned. References  
accompany each article.

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## METHODS OF STUDYING THE QUALITY OF METAL

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AVAILABLE: Library of Congress (TM 607.74)

TM/sec

9/21/59

card 6/6

(2)

LAYZAN, V. [Leizans, V.]; VITOL, A. [Vitols, A.]

Characteristics of the electronic paramagnetic resonance spectra  
of Mn<sup>2+</sup> in crystals of NaCl with Ca<sup>2+</sup> and Cd<sup>2+</sup> impurities. Izv.AN  
Latv.SSR no.12:57-60 '63. (MIRA 17:3)

1. Institut fiziki AN Latviyskoy SSR.

L 19811-65 EM(1)/EMC(b)-2 IJP(c)/AFWL/AS(mp)-2/ESD(gs)

ACCESSION NR: AT5000402 S/3119/64/000/001/0093/0103

AUTHOR: Shvarts, K.K., Layzan, V.B., Lyushina, A.F.

TITLE: Electron spin resonance and luminescence of solid solutions of sodium chloride  
and manganese

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 1, 1964. Ionnye  
kristally\* (Ionic crystals), 93-103

TOPIC TAGS: Luminescence, electron spin resonance, EPR spectrum, solid solution,  
manganese impurity, sodium chloride crystal, luminescence center, crystal irradiation

ABSTRACT: An attempt was made to study the structure of impurity centers of manganese  
and their change under the influence of various factors (heat treatment, decomposition,  
irradiation with x and gamma rays) by means of the electron paramagnetic resonance (ESR)  
and by optical methods. Grown NaCl crystals containing  $MnCl_2$ ,  $TlCl$ ,  $MnF_2$ ,  $CdCl_2$ , and  
 $PbCl_2$  in amounts of 0.1-0.3 mole % were used. The ESR of  $NaCl \cdot MnCl_2$  was found to  
coincide with data in the literature. The x-ray luminescence of manganese and its sensi-  
tized luminescence in crystals subjected to heat treatment and untreated crystals were  
compared. Preliminary irradiation with x or gamma rays was found to decrease the inten-  
sity of x-ray luminescence. On the basis of the spectra obtained, the authors discuss the

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microstructure of manganese centers, the luminescence centers of manganese, the decomposition of solid solutions of sodium chloride and manganese, and the effect of radiation on the manganese centers. Orig. art. has: 8 figures.

ASSOCIATION: None

SUBMITTED: 18Mar64

ENCL: 00

SUB CODE: SS

NO REF SOV: 018

OTHER: 015

Card 2/2

L 19810-65 EFT(m)/EM(t)/ZRP(b) LJP(c)/RAEM(i) JD

ACCESSION NR: AT5000403

S/3119/64/000/001/0105/0120

AUTHOR: Layzan, V.B., Vitol, A.Ya.

TITLE: Electron spin resonance of manganese in NaCl crystals containing cadmium and calcium admixtures

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 1, 1964. Ionnye kristally\* (Ionic crystals), 105-120

TOPIC TAGS: electron spin resonance, EPR spectrum, manganese impurity, cadmium admixture, calcium admixture, sodium chloride crystal, solid solution

ABSTRACT: The authors studied the ESR spectra of Mn<sup>++</sup> ions in NaCl crystals containing the divalent admixtures Cd<sup>++</sup> and Ca<sup>++</sup>. The crystals NaCl·MnCl<sub>2</sub>·CaCl<sub>2</sub>(0.1;0.1) and NaCl·MnCl<sub>2</sub>·CdCl<sub>2</sub> (0.1;0.1) were used. The ESR spectra were studied in the range of 9.0-9.3 Gc by means of a unit with a high-frequency modulation of 980 Kc, at room temperature and at high temperatures. It was found that in quenched crystals, the fine-structure multiplets corresponding to the associates Mn<sup>++</sup>v+ were strongly attenuated. These crystals displayed six strong hyperfine lines with  $g = 2.002 \pm 0.001$  and  $\Lambda = (82.7 \pm 1)$   $10^{-4} \text{ cm}^{-1}$ . It was shown that the appearance of this multiplet is due to the predominant localization of Mn<sup>++</sup> ions at sites with cubic symmetry. The results obtained indicate a

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ACCESSION NR: AT5000403

more complex structure of the solid solution than was hitherto postulated, and a special selective effect of the  $\text{Ca}^{++}$  and  $\text{Cd}^{++}$  admixtures on the arrangement of  $\text{Mn}^{++}$  ions in the lattice. "The wavemeter and counter used were produced by the Erfurt Radio Plant in the German Democratic Republic." Orig. art. has: 6 figures, 15 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 18Mar64

ENCL: 00

SUB CODE: SS

NO REF SOV: 006

OTHER: 036

Card 2/2

L 31129-66 EPF(n) 2/EWT(m)/EWP(t) DIAAP/IJP(c) JD/JG

ACC NR: AT6010460

SOURCE CODE: UR/3119/65/000/003/0103/0110

AUTHOR: Layzan, V. B.; Shvarts, K. K.; Vitol, A. Ya.

28

ORG: none

B+1

TITLE: Effect of gamma radiation on decay of paramagnetic manganese centers in NaCl

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 3, 1965. Ionye kris-tally (Ionic crystals), 103-110

TOPIC TAGS: electron paramagnetic resonance, manganese, sodium chloride, impurity center, gamma irradiation

ABSTRACT: Electron paramagnetic resonance is used for studying the effect of gamma radiation on paramagnetic manganese centers in  $\text{NaCl}-\text{MnCl}_2-\text{CdCl}_2$  crystals. The work was done to determine the qualitative changes in the local structure of impurity centers during gamma radiation and to develop methods for using electron paramagnetic resonance in studying radiation effects. A spectrometer with rf modulation in the 9Gc range was used for measuring the electron paramagnetic resonance spectra. The specimens were irradiated at room temperature. Curves are given for the kinetics of decay under ordinary conditions and under the effect of gamma radiation. It was found that the intensity of central lines is reduced more sharply by radiation than is the intensity of edge lines corresponding to  $\text{Mn}^{++}$  centers. The ratio of the number of

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L 31129-66

ACC NR: AT6010460

centers in the cubic surrounding  $N_k$  to the centers with an associated vacancy  $N_v$  is approximately equal to:

$$\frac{N_k}{N_v} = \frac{1}{21} \left( \frac{I_c}{I_v} - \frac{27}{5} \right).$$

where  $I_c$  is the intensity of the central lines and  $I_v$  is the intensity of the edge lines. Some of the characteristics in the decay of paramagnetic manganese centers in NaCl crystals and the effect of irradiation on this decay process are discussed. Orig. art. has: 6 figures, 3 formulas. [14]

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 007/ OTH REF: 008  
ATD PRESS: 4241

Card 2/2 C

SHVARTS, K.K. [Svarcs, K.]; VITOL, A.Ya. [Vitols, A.]; KRUMIN', Yu.K.  
[Krumins, J.]; LAYZAN, V.B. [Laizans, V.]; LYUSHINA, A.F.

Microstructure of manganese centers in sodium chloride crystals.  
Izv. AN SSSR. Ser.fiz. 29 no.3:404-405 Mr '65.

(MIRA 18:4)

LAYZAN, Ye. I., Cand Med Sci -- (diss) "Comparative Evaluation of  
patients with retarded healing of  
Certain Modern Methods of Treating ~~cases of long-standing unhealed~~  
Erosions of the Uterine Cervix". Len 1958, 18 pp. (1st Leningrad  
Med. Inst. imeni Academician I. P. Pavlov. Chair of Obstetrics and  
Gynecology). 2.0 copies. (KL 34-58, 101)

33

VASIL'YEVA, Ye.T.; KUZNETSOVA, A.D.; LAYZAN, Ye.I.

Use of colpeurysis according to the type of communicating vessels  
in pelvic presentation of the fetus. Kaz. med. zhur. no.6:75-77  
N-D '63. (MIRA 17:10)

1. Kafedra akusherstva i ginekologii (zav. - prof. I.I. Yakovlev)  
1-go Leningradskogo meditsinskogo instituta imeni akademika Pavlova.

NEYLAND, O. [Neilands, O.]; LAYZANE, Z. [Laizane, Z.]

Nitration of some derivatives of cyclic  $\beta$ -diketones by a  
nitrating mixture. Zhur. ob. khim. 34 no.8:2804-2805  
Ag '64. (MIRA 17:9)

1. Rizhskiy politekhnicheskiy institut.

LAYZEROVICH, G.Ya.; LONSKIY, I.S.; CHARNYY, V.Z..

Sulfatizing roasting of nonferrous metal sulfides in a boiling  
fuel bed. TSvet.met. 30 no.9:19-25 S '57. (MIRA 10:10)

I.Gintsvetmet.

(Ore dressing) (Sulfides)

LAZ, Jozsef; TIMAR, Laszlo

Remarks on the article "Problems of electrical power supplies and network development related to the establishment of plants in the country." Villamossag 9 no.12:359 D '61.

1. Osztalyvezeto, JATERV-Villamos Halozati Tervezo es Fejleszto Vallalat (for Laz). 2. Fomernok, E.M. Szereloipari Tervezo Vallalat (for Timar).

LAZA, A., cercetator (Bucuresti)

Six decades of experimentation and culture of medicinal plants in  
Romania. Natura Biologica 16 no.6:83-84. H-B '64.

LAZANYI, Andrei; MARKI, Alpar; MOREA, Maria

Mutagenic action of some sulfonamides, antibiotics and  
autolysis products in the broad bean (Vicia faba L.).  
Studii biol Cluj 14 no.1:129-133 '63.

1. Center of Biological Research, Rumanian Academy,  
Cluj Branch.

LAZA, Aristide

"The ampelography of Rumania" by Gherasim Constantinescu,  
Elena Negreanu, V. Lazarescu, I. Poenaru, Olga Alexei,  
G. Mihalca, Camelia Boureanu. Reviewed by Aristide Laza.  
Rev biol 8 no.3:371-372 '63.

LAZA, Steliana

"Agrotechnological methods for increasing agricultural productivity  
in Moldavia, Oltenia and the southeast of Transylvania". Reviewed  
by Steliana Laza. Studii agr Timisoara 8 no.1/2:147-148 '61.

(Rumania—Agriculture)  
(Rumania—Agricultural research)

LAZABNIK, G., inzh.

Designing sheet-pile bulkheads. Rech. transp. 20 no. 2:39-43  
F '61.  
(Retaining walls)

ACC NR: AP7002985 (A,N) SOURCE CODE: UR/0413/66/000/024/0082/0083

INVENTOR: Kaganova, A. I.; Krylov, L. M.; Golubev, G. A.; Kukin, G. M.; Lazakovich, Ye. S.

ORG: None

TITLE: An instrument for checking seal leakage. Class 42, No. 189611

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 82-83

TOPIC TAGS: vacuum measurement, vacuum seal, quality control

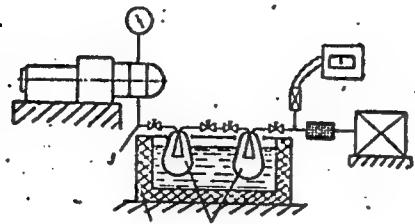
ABSTRACT: This Author's Certificate introduces an instrument for determining leakage in seals used for closing off an evacuated cavity. The installation contains an assembly for producing a vacuum, a meter for measuring this vacuum, and a vacuum line which connects the cavity showing leakage to the assembly for producing the vacuum. The system is designed for quantitative determination of leakage into the evacuated cavity by using a tank with a condensation unit submerged in a liquefied neutral gas and communicating with the vacuum line. Gas leakage through the seals is condensed in this submerged unit and the quantity is determined by chemical methods or by weighing.

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UDC: 620.169.1

ACC NR:

AP7002985



1--tank with liquefied gas; 2--condensation devices; 3--vacuum line.

SUB CODE: 13, 14 / SUBM DATE: 16Jul64

Card 2/2

LAZANOV, G.

On the existence in the subcortex of associated subnuclear centers of eyeball movement. Dokl. Bolg. akad. nauk 17 no.1:201-204 '64

1. Predstavleno akad. D.Orakhovats [deceased].

LAZANOV, N.I. (Sofiya)

Colorimetric method for determining sugar in urine. Lab. delo 7  
no. 3:14-15 Mr '61. (MIRA 14:3)  
(COLORIMETRY) (GLYCOSURIA)

NAZAROV, V.M., kandidat tekhnicheskikh nauk; GENIKE, A.A.; PRILEPIN, M.T.;  
LAZANOV, P.Ye.

New apparatus for measuring distances in geodesy. Geod.i kart.  
no.7:42-43 J1 '57. (MIRA 10:10)  
(Telemeter)

3(4)

AUTHOR:

Lazanov, P. Ye.

SOV/6-58-11-3/15

TITLE:

Investigation of the Geodimeter by Bergstrand, Type NASM-2A  
(Issledovaniye geodimetra Bergstranda tipa NASM-2A)

PERIODICAL:

Geodeziya i kartografiya, 1958, Nr 11, pp 15-22 (USSR)

ABSTRACT:

This is a presentation of the results of the investigation of the geodimeter by Bergstrand, type NASM-2A. It was carried out in 1957 by P. Ye. Lazanov, Scientific Worker of the 'NIIGAiK, together with B. N. Sosnovskiy, Graduate Student at the TsNIIGAiK. This investigation was carried out simultaneously with the testing of the test model of the large optical range meter of the TsNIIGAiK on the Sarata base net in the 'Odesskaya oblast'. This paper also includes information concerning the results of a few investigations of Bergstrand geodimeters which were carried out abroad (Ref 2, 3). The geodimeter investigated in the USSR was obtained from Sweden in August 1957. Summarizingly it is stated that with the help of a geodimeter it is possible to measure a certain number of triangle sides in first grade triangulation rows without great difficulty and that hence an establishment of base nets and base measurements is not necessary. There are 1 figure,

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SOV/6-59-2-2/22

AUTHOR:

Lazanov, P. Ye.

TITLE:

Experience in the Application of Bergstrand's Geodimeter  
(Opyt primeneniya geodimetra Bergstranda)

PERIODICAL:

Geodeziya i kartografiya, 1959, Nr 2, pp 8 - 12 (USSR)

ABSTRACT:

In 1958, Bergstrand's NASM-2A geodimeter (Ref 1) was applied to the measurement of bases and sides of the triangulation. This work was carried out by the brigade of the Sredneaziatskoye AGP (Central Asiatic Aerogeodetical Enterprise) under the supervision of P. Ye. Lazanov, scientific coworker of the TSNIIGAiK (Central Scientific Research Institute of Geodesy, Aerial Surveying and Cartography). 2 trucks were used. On large distances the geodimeter was carried by plane. Surveys were carried out in the Kazakhskaya SSR (Kazakh SSR), Gur'yevskaya oblast' (Gur'yev oblast') and Aktyubinskaya oblast' (Aktyubinsk oblast') from May 29 until November 1. It was an open area with desert and semi-desert vegetation. Temperature varied between 0 and +25°. On evaluation of the corresponding data the rate of light propagation in vacuum was assumed to be 299792.5 km/sec. The geodimeter

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Experience in the Application of Bergstrand's Geodimeter SOV/6-59-2-2/22

was fastened to signals or tripods. It was hoisted to the signals by means of a small rope winch, which was mounted on the truck. The procedure of survey is described in brief. The results have shown that about the same accuracy of distance measurement is attained by means of the geodimeter and invar wires. Experience has shown that it is most useful to measure distances of 15-20 km. The results of control measurements of the bases by means of the geodimeter can be used also for determination of the velocity of light propagation in vacuum. The values obtained are very accurate and are in accordance with those obtained by the British National Laboratory of Physics in 1956 for the velocity of the propagation of radiowaves ( $299792.5 \pm 0.1$  km/sec). In addition, this result confirms the value of light velocity of  $299792.5 \pm 0.4$  km/sec, which was assumed by the XI General Assembly of the International Association of Geodesy. The author gives the formula according to which the relative errors of the measurement of triangulation sides were calculated. On the measurement of distances by means of the geodimeter it must be taken into account that the meteorological data which are determined only on the stations of

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Experience in the Application of Bergstrand's Geodimeter SOV/6-59-2-2/22  
the geodimeter and reflector, do not represent these con-  
ditions within the whole range of measurement. Furthermore,  
the distribution of temperature, pressure and humidity can  
be unequal throughout the night. Each distance must be  
measured during some nights in order to reduce these factors.  
The results obtained by the investigations carried out  
in the steppes of Central Asia have shown that within 2-3  
days distances can be measured with a maximum error of  
not exceeding 1:800000. This offers the possibility to  
abandon the establishment of base nets and the survey of  
bases by means of invar wires. There are 4 tables and 1  
Soviet reference.

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LAZANOV P. YE.

AUTHORS: Laran, B. A., Candidate of Technical Sciences; Bazarov, V. N., Candidate of Technical Sciences; Frilipin, M. T., Candidate of Technical Sciences; Entin, I. I., Candidate of Technical Sciences; Genike, A. A.; Lazanov, P. Ye.; Mikhaylov, V. S.; Shvelev, A. P.

3/006/60/000/04/018/019  
B007/B005

TITLE: On the Book by A. V. Kondrashkov, "Electrooptical Range Finders"

PERIODICAL: Geodesiya i kartografiya, 1960, Nr 4, pp 75-76 (USSR)

TEXT: This is a review of the book by A. V. Kondrashkov (Ref. Footnote on p 75) published in 1959. It is thoroughly discussed as far as it first tries to generalise and systematise the data required for optical range finders. The book consists of two parts. The first part (60% of the volume) gives data from physics, radio engineering, electrical engineering, and electronics. The second part deals with problems directly connected with optical range finders. The incoherent data of varying level on the fields mentioned in the first part are too extensive and inconvenient. The division and mode of representation of these chapters is also a failure. The theory of optical range finders is not well explained. Several concrete mistakes of the book are pointed out. The great number of such mistakes

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reduces the value of the book considerably. It is regretted that the editor of the book Yu. V. Popov paid his principal attention to the title, not to the contents of the book, as can be seen from the introduction. There is 1 Soviet reference.

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LAZANOV, P.Ye.

Range finding with high-precision telemeters of the NASM-2A  
and EOD-1 geodimeter type. Geod.i kart. no.7:7-15 J1 '62.  
(MIRA 15:8)

(Geodimeter)

NAZAROV, V.M.; MIKHAYLOV, V.S.; LAZANOV, P.Ye.

Large EOD-1 geodimeter. Geod.i kart. no.4:8-16 Ap '62.

(Geodimeter—Testing)

(MIRA 15:12)

LAZANOV, P.Ye.

Constant correction for an EOD-1 geodimeter. Geod. i kart. no.  
6:5-12 Je '64.  
(MIRA 17:9)

PRILEPIN, M.T.; LAZANOV, P.Ye.; PETROV, V.P.

Determining the effective length of a light wave by geodimetric measurements. Geod. i kart. no.4:17-21 Ap '64.  
(MikA 17:8)

ACCESSION NO: AP4033975

S/0006/64/000/004/0017/0021

AUTHORS: Prilepin, M. T.; Lazanov, P. Ye.; Petrov, V. P.

TITLE: On the determination of an effective light wavelength for light telemetric measurements

SOURCE: Geodeziya i kartografiya, no. 4, 1964, 17-21

TOPIC TAGS: light telemetry, triangulation geometry, radio geodesy, surveying, cartography/ EOD 1 telemeter, STs 70 incandescent lamp, Kerr cell, FEU 17A photomultiplier, FEU 70 photomultiplier, FEU 7 photomultiplier

ABSTRACT: The authors undertook to investigate which wavelength requires the determination of propagation velocity in order to gain the most reliable light telemetric measurements. Telemeter EOD-1 with incandescent lamp STs-70 (known spectral characteristic) as a light source was used to quantify a "working" spectral bandwidth and effective light wavelength. Preliminary calibrations were performed to determine spectral distribution of the energy of the light stream by means of obtaining the spectral characteristics of sending and receiving systems, the Kerr cell modulator, and reflector. A plot was made showing comparative spectral sensitivities versus emission wavelength for a tungsten beam, for

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ACCESSION NR: AP4033975

spectral translucence over 40 km (20 km reflected), and light energy from telemeter EOD-1 received by photomultiplier FEU-17A. Joint consideration of the three sensitivity curves yielded a fourth that indicated maximum effectiveness between the wavelengths of 4200 and 6400 Å. The determination of  $\lambda_{\text{eff}}$  (effective wavelength) was formulated mathematically first by calculating the effective refraction index  $n_{\text{eff}}$

$$n_{\text{eff}} = \frac{\sum_{i=1}^{i=p} n_i k_i \Delta \lambda}{\sum_{i=1}^{i=p} k_i \Delta \lambda}$$

where  $p$  is the number of wavelength increments corresponding to  $\Delta \lambda$ ,  $n_i$  is the refraction index for the interval, and  $k_i$  is a relative sensitivity constant read from the fourth curve mentioned above. In turn the relationship

$$n_i = 1 + A + \frac{3B}{\lambda^2} + \frac{5C}{\lambda^4}$$

was used to solve for the effective wavelength corresponding to the effective refraction index found.  $A$ ,  $B$ , and  $C$  are dispersion coefficients. For the optical apparatus mentioned  $\lambda_{\text{eff}}$  was found to be 5270 Å. Similar theoretical and experimental results yielded  $\lambda_{\text{eff}} = 5570$  and 5400 Å for photomultipliers FEU-70 and

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